

Solicitation, Offer and Award		1. THIS CONTRACT IS A RATED ORDER UNDER DPAS (15 CFR 350)		RATING	PAGE 1	OF 55 PAGE
2. CONTRACT NO.	3. SOLICITATION NO. DTFH61-97-R-00021	4. TYPE OF SOLICITATION <input type="checkbox"/> SEALED BID (IFB) <input checked="" type="checkbox"/> NEGOTIATED (RFP)	5. DATE ISSUED April 4, 1997	6. REQUISITION/PURCHASE NO.		
7. ISSUED BY Federal Highway Administration Office of Acquisition Management 400 Seventh Street, SW, Room 4410 Washington, DC 20590			8. ADDRESS OFFER TO (If other than Item 7)			

NOTE: In sealed bid solicitation "offer" and "offeror" mean "bid" and "bidder".

SOLICITATION

9. Sealed offers in original and 6 copies for furnishing the supplies or services in the Schedule will be received at the place specified in Item 8, or if handcarried, in the depository located in 400 7th St., S.W., Room 4410 _____ until 4:00pm local time May 19, 1997.

CAUTION - LATE Submission, Modifications, and Withdrawals: See Section L, Provision No. 52.214-7 or 52.215-10. All offers are subject to all terms and conditions contained in this solicitation.

10. FOR INFORMATION CALL:	A. NAME Alan Finfrock	B. TELEPHONE NO. (Include area code) (NO COLLECT CALLS) (202) 366-0125
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OFFER (Must be fully completed by offeror)

NOTE: Item 12 does not apply if the solicitation includes the provisions at 52.214-16, Minimum Bid Acceptance Period.

12. In compliance with the above, the undersigned agrees, if this offer is accepted within _____ calendar days (60 calendar days unless a different period is inserted by the offeror) from the date for receipt of offers specified above, to furnish any or all items upon which prices are offered at the price set opposite each item, delivered at the designated point(s), within the time specified in the schedule.

13. DISCOUNT FOR PROMPT PAYMENT (See Section I, Clause No. 52.232-8)		10 Calendar Days %	20 Calendar Days %	30 Calendar Days %	Calendar Days
14. ACKNOWLEDGMENT OF AMENDMENTS (The offeror acknowledges receipt of amendments to the SOLICITATION for offerors and related documents numbered and dated:.		AMENDMENT NO.	DATE	AMENDMENT NO.	DATE
15A. NAME AND ADDRESS OF OFFEROR	CODE _____ FACILITY _____		16. NAME AND TITLE OF PERSON AUTHORIZED TO SIGN OFFER (Type or print)		
15B. TELEPHONE NO. (Include area code)	15C. CHECK IF REMITTANCE ADDRESS IS <input type="checkbox"/> DIFFERENT FROM ABOVE - ENTER SUCH ADDRESS IN SCHEDULE		17. SIGNATURE		18. OFFER DATE

AWARD (To be completed by Government)

19. ACCEPTED AS TO ITEMS NUMBERED		20. AMOUNT	21. ACCOUNTING AND APPROPRIATION	
22. AUTHORITY FOR USING OTHER THAN FULL AND OPEN COMPETITION:				
<div><div></div> 10 U.S.C. 2304(c)()</div> <div><div></div> 41 U.S.C. 253(c)()</div>			23. SUBMIT INVOICES TO ADDRESS SHOWN IN <i>(4 copies unless otherwise specified)</i>	ITEM
24. ADMINISTERED BY <i>(If other than Item 7)</i> CODE			25. PAYMENT WILL BE MADE BY CODE	
26. NAME OF CONTRACTING OFFICER <i>(Type or print)</i>			27. UNITED STATES OF AMERICA <i>(Signature of Contracting Officer)</i>	28. AWARD DATE

IMPORTANT - Award will be made on this Form, or on Standard Form 26, or by other authorized official written notice.

NSN 7540-01-152-8064STANDARD FORM 33 (Rev. 4-85)
PREVIOUS EDITION NOT USABLE 33-134Prescribed by GSA
FAR (48 CFR) 53.214(c)
GPO : 1987 O - 181-247 (40254)

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P A R T I

SECTION B - SUPPLIES OR SERVICES AND PRICES/COSTS

The Contractor shall furnish all facilities, materials, and personnel and shall perform all services necessary to conduct a study entitled: "Bonded Structural Repair Systems for Highway Bridges - FRP Concrete."

The total estimated cost plus fixed fee for the performance of this contract is \$_____, which consists of the estimated cost of \$_____, and a fixed fee of \$_____.

All travel shall be reimbursed at cost in accordance with the Travel and Per Diem clause (reference Section G). Travel and per diem shall not exceed \$55,000. This amount is contained within the total contract value as stated above.

SECTION C - DESCRIPTION/SPECIFICATIONS/STATEMENT OF WORK

INTRODUCTION AND BACKGROUND

Fiber-reinforced polymer composites (FRPs) are a class of materials with almost 50 years of successful application in areas as diverse as the military; the automotive industry; chemical processing and transportation; housing; sports equipment; and medical implants. They are now working their way into structural engineering. Although several countries, including the United States, have already built highway and pedestrian bridges using FRP materials, design criteria, standards, and test methods need to be developed in order to encourage the spread of composites into general design practice. The Federal Highway Administration (FHWA), after several years of supporting successful small-scale university research programs, concluded that there would be a high return on funds invested in a full-scale national program of new materials research. The program, as it emerges over the next several years, will examine the general issues of strength, durability, and joining methods for FRP materials and then concentrate on developing practical structural elements out of FRP's.

FRP materials bonded to concrete structures have been the subject of considerable interest over the last two decades. The materials may be applied in several forms. The first, developed by the EMPA Laboratory in Switzerland, involves adhesive bonding of a fully-cured composite plate to the concrete structure. The second, developed in several different forms by manufacturers in

the United States and Japan, involves forming and curing the composite element on the concrete structure itself. Sheets of uncured or partially-cured fiber reinforcements are applied to the concrete structure,

impregnated with resin, and cured on the structure. The same resin which serves as the composite matrix also bonds the composite to the concrete. A third form, used primarily for seismic retrofitting of concrete columns, involves the application of fiber reinforcement by filament winding.

Although the applications, themselves, have been evaluated individually, there has been little comparative evaluation across different technologies. There is a growing desire on the part of the highway community to conduct such evaluations, through programs such as the Highway Innovative Technology Evaluation Center (HITEC) and FHWA's Priority Technology Program, but the tools that these programs would require to conduct such evaluations are lacking. Research into the long-term performance of these applications as structural adhesive systems is incomplete, and durability issues have not been addressed in a comprehensive way. Although quality control on the products now in service appears to be good, industry-wide product standards do not exist, and material acceptance criteria and test methods, to be used by future clients of the technologies, need to be developed.

The goal of this study is to produce (in the words of the AASHTO LRFD Bridge Design Specification) "a calibrated, reliability-based limit state specification" for the design and application of bonded FRP systems to repair and rehabilitate concrete highway bridges and structural elements on those bridges. A corollary goal is the development of the tools to predict and evaluate the long-term performance of bonded repair systems.

To do this requires a definition of loads, a reliable understanding of the ability of bonded FRP repair systems to resist these loads over the long-term, and a calibration of initial design specifications on a population of real structures. The first of these three requirements will be met under this contract by a task aimed at defining the range and type of expected loads by performing a series of preliminary designs on four specific structural applications. The second requirement will be met by developing performance specifications for bonded FRP repair techniques in these four applications, conducting an extensive study of short-term structural behavior of retrofitted or repaired structural elements using these applications, and by performing a pilot investigation of prediction of long-term performance using a number of accelerated techniques now being developed to study the long term behavior of both composite systems and adhesive systems. Recommended test standards and design and construction specifications will be developed as part of this phase. The third requirement will be met outside this study by evaluation efforts being conducted under other programs. These evaluations will substantially depend on the outcome of this study, however, because this study will have laid the groundwork

for understanding the long-term behavior of bonded FRP repair systems on highway bridges. The final phase of this study will be to investigate the use of non-destructive evaluation techniques to validate the predictive methods investigated previously, and to make recommendations on methods for conducting field investigations of long-term mechanical behavior and environmental durability of bonded FRP repair systems.

CONTRACT OBJECTIVES

The objectives of this contract are to:

1. Produce preliminary mandatory long-term product performance specifications for FRP repair and retrofit materials and systems bonded to concrete structural elements.
2. Produce recommended qualification and acceptance test standards for material components and systems. Produce recommended test standards to develop design data based on predicted material and system long-term properties.
3. Produce preliminary specifications (with commentary), and guidelines for the analysis, design, and construction of four designated highway bridge applications using FRP repair systems bonded to concrete structural elements.
4. Produce recommendations for methods to conduct field investigations of long-term mechanical behavior and environmental durability of bonded FRP repair systems.

SCOPE OF WORK

Under this contract, the Contractor shall perform preliminary designs on four specified structural applications to define the range and type of loads expected on FRP repair and retrofit systems bonded to concrete structural elements (which will be referred to as “bonded FRP systems” throughout this prospectus). Laboratory investigations shall be conducted, where appropriate, to define short-term structural behavior of preventatively retrofitted or damaged and repaired structural elements using these applications. The results of these investigations shall be combined with the results of investigations conducted elsewhere to produce preliminary product performance specifications for these four applications. Techniques now being developed to study the long term behavior of both composite systems and adhesive systems shall be used, by the Contractor, to perform pilot laboratory investigations of the long-term structural behavior of the four specified systems. Recommendations for qualification and acceptance test standards for material components and systems shall be produced. Recommendations for test standards to develop design data based on predicted material and system long-term properties will be produced. Preliminary specifications (with commentary), and guidelines for the analysis, design, and construction of the four specified highway bridge applications using FRP repair systems bonded to concrete structural elements shall be produced. Pilot laboratory investigations shall be conducted on the use of non-destructive evaluation techniques to validate the predictive methods investigated previously. Recommendations for methods to conduct field investigations of long-term mechanical behavior and environmental durability of bonded FRP repair systems shall be developed.

This study will be strictly concerned with FRP repairs or retrofits applied to the surface of concrete structures and concrete structural elements. Surfaces include the interior surfaces of hollow structural elements, such as large box beams. Internal reinforcement of concrete is beyond the scope of this study. The study will be concerned with bridge construction only. Technologies with applications only in building construction (including parking structures) are beyond the scope of this effort. The specified repairs/retrofits include both superstructure and substructure structural elements. Specifically excluded are: 1) Externally-attached or anchored prestressing tendons or rods for post-tensioning of damaged/deteriorated bridge girders; 2) Building repairs or retrofits; 3) Geotechnical repairs or retrofits, including foundation repairs and retaining wall repairs; 4) Structural elements, fabricated new, similar to the repair techniques being studied here, including concrete-filled composite shells. Research directed toward these applications is beyond the scope of this effort.

DELINEATION OF CONTRACTOR TASKS

In order to meet the objectives of this contract, the Contractor shall perform the following tasks:

TASK A - PRELIMINARY DESIGNS

A.1 The Contractor shall define FRP and FRP-Adhesive system requirements for the following bonded repair and retrofit applications on concrete structural elements: a) Seismic Column Retrofit; b) I-Girder and Box Beam Repair/Retrofit [repair of impact damage; repair of other in-service damage, including corrosion-induced damage; flexural, shear, and torsional live load upgrading or rehabilitation owing to inadequate original design]; c) Deck Soffit Applications [crack repair or live-load upgrade]; d) Substructure Repairs [pile/column bent caps, pier walls, non-seismic column repair/upgrade]. A representative range of bridge sizes shall be selected by the Contractor to identify design criteria for these structure types, including criteria for adhesive bond performance and composite performance. The Contractor shall conduct a preliminary structural design using representative properties of available glass, aramid, and carbon composite plates and sheets, adhesives, and composite-adhesive systems. The range and type of loads expected on FRP repair systems bonded to concrete structural elements shall be defined. The design shall include a full analysis of construction and structural detailing issues that are affected by FRP system dimensions and materials. The Contractor shall make maximum use of information developed in previous studies and development efforts. Previous efforts shall be examined critically and relevant information shall be incorporated in this preliminary design

The preliminary design will also determine likely long-term service behavior of the bonded FRP systems when used in the designated structural applications, including temperature and moisture effects and concrete cracking. The effects of environment and

sustained long-term loads on individual material properties shall be detailed. The effect of degradation of each material property in each component of the system on the overall structural performance of the repaired/retrofitted structure shall be modeled in detail. The purpose of this last item is to identify the most critical types of component degradation for further study.

- A.2 For the specific structural applications analyzed under Task A.1., the Contractor shall develop preliminary material and design requirements for bonded FRP systems. These preliminary system requirements shall form the basis of material acceptance, handling, and construction specifications to be published as part of the final report. Existing manufacturers specifications and recommended practices shall be used the greatest extent possible, but areas where differences occur should be highlighted. The Contractor shall consider these areas in developing the test program under Task B. Bonding surface preparation or modification shall be addressed specifically (interfacial adhesion behavior is a particular concern of this study).

TASK B - SHORT-TERM STRUCTURAL BEHAVIOR

- B.1 The Contractor shall obtain trial FRP composites, adhesives, reinforcements, and resins manufactured according to the requirements developed under Task A.2. The Contractor shall obtain a sufficient quantity of each type to conduct a statistically valid test program. With the cooperation of the manufacturers, the contractor shall develop and implement a quality control program to assure consistent mechanical properties in the delivered materials.
- Documentation of any existing proprietary systems, patented or not, shall be provided to the Government by the Contractor. This documentation shall include a justification for the use of these items and substantiation of this justification with valid, independent testing of these items against the requirements specified in Task A.2. The report of this testing shall include all recorded test data. (Reference Section L of the RFP for proposal preparation instructions specific to this task.)
- B.2 The Contractor shall develop and conduct an acceptance test program to verify geometric, material, surface, and bond characteristics, and to obtain relevant short-term mechanical properties of the trial bonded FRP systems manufactured in Task B.1. Properties tested shall include, as a minimum, those identified as critical to short- and long-term performance in Task A.
- B.3 The Contractor shall develop and conduct a test program, using large- to full-scale control and repaired/retrofitted structural sections, to define short-term structural behavior of preventatively retrofitted or damaged and repaired structural elements using bonded FRP systems. The tests shall determine service and ultimate behavior under short-term, i.e., "live," axial, flexural, shear, and torsional loadings, and appropriate combinations of these loadings as indicated by the analysis in Task A.1. Impact loading shall be studied where appropriate.

The Contractor shall concentrate the majority of his effort in this task on loading conditions which have not been fully addressed by previous research, and devote a limited

amount of resources to those areas which have been relatively well-covered, e.g., ductility of seismic retrofits.

The Contractor shall interpret his own, and previous researchers' test results, to determine the validity of the design criteria and predictions of service behavior developed by analysis in Task A.1., and make modifications in those criteria and predictions as needed.

TASK C - PRODUCT PERFORMANCE SPECIFICATIONS

C.1 The Contractor shall develop product performance specifications for the four specified applications of bonded FRP systems. The specifications shall be based on the results of the analysis conducted under Task A, and the test programs conducted under Task B, and prior research and development work in the application areas. These specifications shall define expected performance of the bonded FRP systems under short-term loading. They will form the basis for target residual performance after long periods of environmental exposure and sustained loading. They will be modified, as necessary, and incorporated in the Final Specifications of Task F as mandatory performance targets. This will be in conjunction with the Guide Analysis, Design, and Construction Specifications of Task E, which are intended as guidelines for reaching the performance targets.

Cohesive and interfacial adhesive bond performance shall be specified as separate performance criteria, apart from, and in addition to, overall structural performance.

C.2 The Contractor shall document the test methods used in Tasks B.2 and B.3, including any recommended modifications, to be used as a test supplement to the specifications developed under Task C.1. Every product performance specification shall have a corresponding test associated with it. The use of one test method for more than one specification is acceptable. Develop the methods used in Task B.2 as a qualification and acceptance test specification.

C.3 The Contractor shall submit Interim Report No.1, containing a detailed summary the results of Tasks A, B, C.1 and C.2, and containing, in separate sections, in a format suitable for publication in the Task F, Final Specifications, the recommended mandatory *Performance Specifications* developed in Task C.1 and the *Qualification/Acceptance Test Methods* developed in Task B.2 and documented in Task C.2.

Draft Interim Report No.1

Submit four copies of draft Interim Report No. 1 to the COTR, one copy each to all project reviewers designated by the COTR, and one additional copy to the Contracting Officer. The drafts of the Interim reports shall include a detailed report on all the tasks conducted up to those points.

The COTR will review the draft interim reports and provide technical comments within 60 days. Subsequent review and correction cycle may be necessary if considerable revision is deemed necessary. The substance of the COTR's comments shall be reflected in the final interim report. The offeror shall provide the actual delivery time based on the schedule submitted by the offeror for the performance of this study. Therefore, the actual due dates for the reports will be designated after the start of the contract, but shall not be before the completion of Task C.2.

Final Interim Report No.1

The Contractor shall furnish to the COTR 3 copies, and to all of the project reviewers, one copy each, of the final interim report in addition to one reproducible copy within 30 days following receipt of the COTR's comments. The final interim report shall be produced as defined in "Specifications for Reports."

- C.4 The Contractor shall submit, to the COTR, 4 copies of a Technical Article summarizing the results reported in the interim report 30 days after the submission of the interim report. The article shall be suitable for publication in a national civil engineering trade magazine or journal and agree with its particular style and format. The COTR will review the draft article and provide comments within 30 days. The substance of the FHWA COTR's comments shall be reflected in the paper. The Contractor shall submit the reviewed camera-ready copy of the paper directly to the trade magazine.

TASK D - LONG-TERM MATERIAL AND STRUCTURAL BEHAVIOR

- D.1 The Contractor shall obtain trial FRP composites, adhesives, reinforcements, and resins manufactured according to the requirements developed under Task A.2. The Contractor shall obtain a sufficient quantity of each type to conduct a statistically valid test program. With the cooperation of the manufacturers, the Contractor shall develop and implement a quality control program to assure consistent mechanical properties in the delivered materials.

Documentation of any existing proprietary systems, patented or not, shall be provided. This documentation shall include a justification for the use of these items and substantiation of this justification with valid, independent testing of these items against the requirements specified in Task A.2. The report of this testing shall include all recorded test data.

- D.2 The Contractor shall develop and conduct a test program, using control and repaired/retrofitted specimens and techniques for accelerated testing, to predict the long-term degradation in the composites, adhesives, underlying concrete structures, and the bonded systems of FRP/Concrete and FRP/Adhesive/Concrete which comprise the

systems of preventatively retrofitted or damaged and repaired structural elements using bonded FRP systems. Excessive deformation and swelling in the adhesive, loss of mechanical properties in the composites and adhesives, cracking and corrosion in the concrete structure, and interfacial failure of the bonded materials would be examples of degradation of the components and systems. The accelerated tests shall be conducted to represent design service life under controlling maximum temperature and moisture conditions.

- D.3 Using the results of Task D.2 and the modeling of long-term structural behavior with degraded components, performed under Task A.1, the Contractor shall develop and conduct a test program, using control and repaired/retrofitted structural sections and techniques for accelerated testing, to predict the long-term structural behavior of preventatively retrofitted or damaged and repaired structural elements using bonded FRP systems. The test program shall be limited to those types of degradation which have been identified as critical to long-term structural performance in Task A.1. The accelerated tests shall be conducted to represent structural performance near the end of design service life under controlling maximum temperature and moisture conditions.

Failure criteria shall be developed as part of this sub-task. These criteria shall be based on both ultimate and service limits, and shall include structural failure or unacceptable deformations in any of the components or of the system. Examples include interfacial failure of the composite/concrete bond, excessive deformation of the adhesive, and continued or, possibly accelerated corrosion of the concrete reinforcing steel. The tests shall determine residual service and ultimate behavior under short-term, i.e., "live", axial, flexural, shear, and torsional loadings after environmental conditioning, and fatigue and sustained loadings during environmental conditioning. Appropriate combinations of these loadings, and whether or not to conduct environmental conditioning under stress, as indicated by the analysis in Task A.1, shall be considered in developing and conducting the test program. Impact loading shall be studied where appropriate.

TASK E - ANALYSIS, DESIGN, AND CONSTRUCTION GUIDE SPECIFICATIONS

- E.1 The Contractor shall develop specifications (with commentary) and guidelines for the analysis, design, and construction of the four specified highway bridge applications using FRP repair systems bonded to concrete structural elements. The specifications shall be based on the results of the analysis conducted under Task A, and the test programs conducted under Tasks B and D, and prior research and development work in the application areas. The specifications shall be developed as guidelines for reaching the performance targets specified under Task C. They will: 1) allow designers to incorporate long-term degradation of performance into design limits; and, 2) provide designers with guidelines for structural detailing to reduce long-term degradation of performance.

Guide specifications designed to meet criteria for adhesive bond performance shall be developed apart from, and in addition to those for FRP long-term performance. These criteria include both adhesive (interfacial) and cohesive (within the adhesive and within the adherends) behavior, and corresponding consideration of the preferred failure sequence at ultimate loads. Thus, part of the design specification will use the approach of designing the bonded FRP system as an adhesive joint. The corresponding construction specification will include detailed adhesive handling and mixing, surface preparation, application, and curing guidelines.

The effect of bonded FRP systems on the corrosion of reinforcing and prestressing steel shall be explicitly treated in the design and construction specifications.

Factors in design and detailing not explicitly mentioned previously, but relevant to the analysis, design, and construction of bonded FRP systems, shall be addressed in this task. Example problems, with solutions and a summary of product test data shall be included in the guidelines.

E.2 The Contractor shall document the test methods used in Tasks D.2 and D.3, including any recommended modifications, to be used as a test supplement to the specifications developed under Task E.1. Develop the methods used in Task D.2 and D.3 as recommended test procedures to develop design data based on predicted long-term material and system properties. Revise the Qualification/Acceptance Test Methods developed in Task C based on the results of Tasks D.2 and D.3.

E.3 Submit Interim Report No.2, containing a detailed summary of the results of Tasks D, including *Recommended Long-Term Test Procedures* and *Revised Qualification and Acceptance Test Procedures*. The report shall contain the recommended *Analysis, Design, and Construction Specifications and Guidelines* developed in Task E.1, for using bonded FRP systems in the designated highway bridge applications. The specifications shall be written to be compatible with the AASHTO *LRFD Bridge Design Specification*.

Draft Interim Report No.2

Submit four copies of draft Interim Report No. 2 to the COTR, one copy each to all project reviewers designated by the COTR, and one copy to the Contract Administrator. The drafts of the Interim reports shall include a detailed report on all the tasks conducted up to those points.

The COTR will review the draft interim reports and provide technical comments within 60 days. Subsequent review and correction cycle may be necessary if considerable

revision is deemed necessary. The substance of the FHWA COTR's comments shall be reflected in the final interim report. The offeror shall provide the actual delivery time based on the schedule submitted by the offeror for the performance of this study. Therefore, the actual due dates for the reports will be designated after the start of the contract, but shall not be before the completion of Task E.1.

Final Interim Report No. 2

The Contractor shall furnish to the COTR three copies, and to all of the project reviewers, one copy each, of the final interim report in addition to one reproducible copy within 30 days following receipt of the FHWA COTR's comments. The final interim report shall be produced as defined in "Specifications for Reports."

TASK F - RECOMMEND VALIDATION PROGRAM / FINAL REPORT

F.1 In conjunction with appropriate professional and technical organizations, develop recommendations for: 1) Monitoring an inspection methods to conduct field investigations of long-term mechanical behavior and environmental durability of bonded FRP repair systems; 2) Implementation of Final Specifications for performance, analysis, design, construction, and testing through appropriate governing bodies; and, 3) Training and education to disseminate the results of both this contract and the recommended field

investigations to the structural community. Item (1) shall also contain recommended methods to standardize reporting of test and monitoring data, which, in addition to the recommended test methods, will be published in the final report.

F.2 The Contractor shall prepare a Final Report and Technical Summary containing the contents of the two interim reports, and the recommendations developed in Task F.1. Technical data developed in Tasks B, and D shall be tabulated for use by structural designers.

Draft Final Report

Submit four copies of a detailed draft final report to the COTR, one copy each to all of the project reviewers, and one additional copy to the Contract Administrator 90 days prior to the completion date of the contract. The draft final report shall include a detailed discussion of analysis of the research and results for all the tasks including needed future research and field implementation technology. The report shall summarize the results of all prior tasks. The report shall specifically contain:

- 1) Recommended mandatory *Performance Specifications* for long-term product performance for FRP repair and retrofit materials and systems

bonded to concrete structural elements. These recommendations shall be specific to each of the four structural applications designated under Task A.1.

- 2) Recommended *Qualification/Acceptance Test Methods* [as revised] for material components and systems.
- 3) Recommended *Long-Term Test Procedures* to develop design data based on predicted material and system long-term properties.
- 4) Recommended *Analysis, Design, and Construction Specifications (with Commentary) and Guidelines* for the four designated highway bridge applications using FRP repair systems bonded to concrete structural elements.

- 5) Recommended *Monitoring and Inspection Methods* to conduct field investigations of long-term mechanical behavior and environmental durability of bonded FRP repair systems.
- 6) Recommended implementation and training in the use of the items in 1 to 4.
- 7) Technical data developed in Tasks B and D, tabulated for use by structural designers.

The COTR will review the draft final report and provide technical comments within 30 days. Subsequent review and correction cycle may be necessary if considerable revision is deemed necessary. The Contractor shall revise the final report to reflect those comments.

Draft Final Technical Summary

- a. The Contractor shall prepare a draft final technical summary, summarizing the final report. It shall represent a condensation similar to a research digest, and the length should be about 4-6 pages including any necessary charts and illustrations. The condensation must be well organized and written in clear, concise language in order that a busy executive or transportation administrator can properly and easily assess the development and impact of the research results without becoming involved with technical details. It shall focus on the utility of the results of the research. The summary should take less than ½ hour to read, in which time the executive can easily see the highlights of the research results and recognize how such findings would be of immediate interest in his area. In addition, the final technical summary can be used to quickly alert all operating and research personnel to the merits and scope of the major research findings. Thus, the condensation shall include the salient points among the various findings in the main body of the final report and summarize the interim report's recommendations and conclusions, list applicable problem areas, and clearly indicate whatever limitations or constraints are imposed on the results.
- b. On or before 45 months after the effective date of the contract, the Contractor shall submit 4 copies of the draft final technical summary to the COTR, one copy each to all project reviewers, and one additional copy to the Contract Administrator. The COTR will review the draft final technical summary and provide technical comments within 30 days. Subsequent review and correction cycle may be necessary if considerable revision is deemed necessary. The Contractor shall revise the final technical summary to reflect the COTR's comments.

Final Report and Final Technical Summary

On or before 48 months after the effective date of the contract, the Contractor shall deliver to the COTR three copies, and to all of the project reviewers, one copy each, of the final report and final technical summary in addition to one reproducible copy. The final report shall be produced as defined in "Specifications for Reports."

Specifications for the Final Report and Technical Summary

The final report shall be prepared in accordance with "Guidelines for Preparing Federal Highway Publications" (DOT-AD-88-001), dated January 1988, and Change 1 dated May 20, 1995.

The technical summary is to be prepared in a 2-column format. All text on page including figures and tables, shall be reduced when using this format. Number and letters in figures and tables shall be no smaller than that of the text.

- F.3 The Contractor shall prepare and submit 4 copies of a Technical Article summarizing the results reported in the final report 60 days prior to the completion of the contract. The article shall be suitable for publication in a national civil engineering trade magazine or journal and agree with its particular style and format. The Contractor shall submit a draft of the article to the COTR on or before 46 months after the effective date of the contract. The COTR will review the draft and provide comments within 30 days. The substance of the COTR's comments shall be reflected in the paper. The Contractor shall submit the reviewed camera-ready copy of the article directly to the trade magazine. The final article shall be submitted to the trade magazine on or before 48 months after the effective date of the contract. A copy of the final article shall be provided to the COTR.
- F.4 On or before 48 months after the effective date of the contract, the Contractor shall provide to the COTR a set of reproducible slides representative of the step-by-step progress of the contract. As a minimum, this set shall contain the slides for important figures, pictures, objectives, results, and conclusion on this study for making a formal presentation. The quality of the slides shall meet the criteria set by the Transportation Research Board.
- F.5 On or before 48 months after the effective date of the contract, the Contractor shall deliver to the COTR one sample each of all prototype materials and test equipment developed under this contract.

TASK G - COORDINATION with HITEC "COMPOSITE BRIDGE STRENGTHENING

EVALUATION PANEL”

On or before 60 days after the effective date of the contract, the Contractor shall establish a coordination plan and schedule with the HITEC Composite Bridge Strengthening Evaluation Panel. The purpose of this coordination is to assist, in any technical areas requested by that panel and approved by the Contracting Officer, the panel's efforts to:

- a) Produce a synthesis of existing design and construction specifications, technical literature, and current research.
- b) Evaluate the three bonded repair systems whose applications are now before the panel: Sika Carbodur; Mitsubishi Replark; and Tonen FORCA Tow Sheet.
- c) Plan and Implement four field evaluations of the above mentioned systems.

The scope of this coordination is advisory only. The primary efforts including literature reviews, analysis, laboratory, field testing, and report writing to produce the three items listed above will be made by the HITEC panel or its own Contractor(s). Total contract funds expended on this task shall not exceed \$22,000. There shall be at least four meetings between the Contractor and the HITEC Technical Panel, to be held at times and locations mutually agreed upon between the COTR and the HITEC. The HITEC Technical Panel Chairman will be responsible for coordinating and scheduling meetings between the Contractor and the HITEC panel. HITEC shall secure the meeting room, necessary equipment, and lodging. Costs of the meetings for Contractor staff, including travel, per diem, and incidentals shall be eligible for reimbursement from the contract budget. The Contractor shall not be responsible for travel and meeting costs associated with HITEC Technical Panel members and HITEC staff. The Contractor shall, in addition, coordinate with the HITEC Technical Panel Chairman on the scheduling and oversight of any working groups subsequently formed.

The Contractor shall provide a technical secretary for any meetings held with HITEC under this task. The technical secretary shall attend all meetings between the Contractor and the full HITEC Technical Panel, and working groups. The technical secretary shall take notes and prepare complete minutes of the meetings; including summarizing technical presentations made by the researchers and comments made thereon by the attendees. The technical secretary shall follow up on discussions and/or comments that are made during the meetings, in order to gather additional information that more completely identifies and/or answers comments that were made during the meetings, and inform the HITEC panel chairman or project manager of actions that he may wish to request of panel members. The technical secretary shall gather and disseminate information and inform contract staff and HITEC panel members or staff which potential follow-up actions identified at the meetings are being taken, by whom, and when they will be completed. The technical secretary shall prepare summary reports and tabulations of comments, including follow-up comments, and actions taken. HITEC activities, other than the three listed above, are outside the scope of this contract. Contractor expenses incurred for assistance to HITEC for activities other than the three listed above shall not be reimbursable under this contract.

SECTION D - PACKAGING AND MARKING

There are NO articles for this section.

SECTION E - INSPECTION AND ACCEPTANCE

All work hereunder shall be subject to review by the Government. Acceptance of the final report shall be made in writing by the Contracting Officer.

52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.

52.246-9 Inspection of Research Development (Short Form) (APR 1984)

SECTION F - DELIVERIES OR PERFORMANCE**PERIOD OF PERFORMANCE**

All work and services required hereunder including preparation and submission of the final report shall be completed on or before 48 months after the effective date of the contract.

PLACE OF DELIVERY

All deliverables and a copy of the monthly reports (See Section G) under the contract shall be delivered F.O.B. Destination, under transmittal letter, to the following address:

Turner-Fairbank Highway Research Center
6300 Georgetown Pike
McLean, Virginia 22101
Attn: [to be filled in at award]

The monthly progress report and other items as specified shall be delivered to the Contracting Officer at the following address:

Federal Highway Administration
Office of Acquisition Management
HAM30-B, Room 4410
Washington, D.C. 20590

SCHEDULE OF WORK

All tasks set forth in the Statement of Work shall be performed in accordance with the work schedule as negotiated. Performance shall begin on the effective date of the contract.

DELIVERABLES

The Contractor shall deliver the following items, in accordance with the Statement of Work:

1. First Interim Report: Results up to and including Task C.2. Due on or before 20 months after the effective date of the contract.
2. Second Interim Report: Results up to and including Task E.2. Due on or before 36 months after the effective date of the contract.
- 3a. Draft Final report on the contract: Due on or before 90 days prior to the completion date of the contract.
- 3b. Final report on the contract: Due on or before the completion date of the contract.
4. Final technical summary on the contract: Due on or before 60 days prior to the completion date of the contract.
5. Technical Article suitable for publication in trade magazine detailing the research reported in interim and final report: Due on or before the completion date of the contract.
6. A set of suitable slides on the contract for making formal presentation and shall meet the quality criteria set by the Transportation Research Board. Due on or before the completion date of the contract.
7. One specimen each of all prototype materials and test equipment developed under this contract: Due on or before the completion date of the contract.

52.242-15 STOP-WORK ORDER (AUG 1989) -- ALTERNATE I (APR 1984)

- (a) The Contracting Officer may, at any time, by written order to the Contractor, require the Contractor to stop all, or any part, of the work called for by this contract for a period of 90 days after the order is delivered to the Contractor, and for any further period to which the parties may agree. The order shall be specifically identified as a stop-work order issued under this clause. Upon receipt of the order, the Contractor shall immediately comply with its terms and take all reasonable steps to minimize the incurrence of costs

allocable to the work covered by the order during the period of work stoppage. Within a period of 90 days after a stop-work order is delivered to the Contractor, or within any extension of that period to which the parties shall have agreed, the Contracting Officer shall either:

- (1) Cancel the stop-work order; or

- (2) Terminate the work covered by the order as provided in the Termination clause of this contract.
- (b) If a stop-work order issued under this clause is canceled or the period of the order or any extension thereof expires, the Contractor shall resume work. The Contracting Officer shall make an equitable adjustment in the delivery schedule, the estimated cost, the fee, or a combination thereof, and in any other terms of the contract that may be affected, and the contract shall be modified, in writing, accordingly, if:
 - (1) The stop-work order results in an increase in the time required for, or in the Contractor's cost properly allocable to, the performance of any part of this contract; and
 - (2) The Contractor asserts its right to the adjustment within 30 days after the end of the period of work stoppage; provided, that, if the Contracting Officer decides the facts justify the action, the Contracting Officer may receive and act upon a proposal submitted at any time before final payment under this contract.
- (c) If a stop-work order is not canceled and the work covered by the order is terminated for the convenience of the Government, the Contracting Officer shall allow reasonable costs resulting from the stop-work order in arriving at the termination settlement.
- (d) If a stop-work order is not canceled and the work covered by the order is terminated for default, the Contracting Officer shall allow, by equitable adjustment or otherwise, reasonable costs resulting from the stop-work order.

SECTION G - CONTRACT ADMINISTRATION DATA

MONTHLY PROGRESS REPORT

The Contractor shall furnish 4 copies of a monthly letter-type progress report to the Contracting Officer's Technical Representative and one copy to the Contract Administrator, on or before the 15th of the month following the calendar month being reported. Each report shall contain concise statements covering the research activities relevant to the study, including:

- 1. A clear and complete account of the work performed on each task.
- 2. An outline of the work to be accomplished during the next report period.
- 3. A bar chart showing the work completed by task versus the Schedule of Work of the contract. (See Attachment 1b.)

4. A description of any problem encountered or anticipated that will affect the completion of the contract within the time and fiscal constraints as set forth in the contract, together with recommended solutions to such problems; or, a statement that no problems were encountered.
5. A tabulation of the planned, actual and cumulative person-hours expended by the personnel identified in the Professional Staffing of the contract.
6. A chart showing current and cumulative expenditures by tasks versus planned expenditures. (See Attachment 1c.)
7. Current and cumulative hours and costs expended for ADP services (programming, computer time, etc.) or a statement that there were none.
(See Attachment 1a for items 1, 2, 4, 5, and 7.)

FUNDS AVAILABLE

- a. Currently, funds in the amount of \$_____ are obligated to this contract.
- b. The balance of funding under this contract, \$_____ will be obligated subject to the availability of funds and a formal modification to this contract issued by the Contracting Officer.
- c. The clause entitled "LIMITATION OF FUNDS" applies to this contract. Any notification required on the part of the Contractor shall be made in writing to the Contracting Officer. In the event that the contract is not funded beyond the estimated cost set forth in the schedule, the Contractor shall deliver to the Contracting Officer the data collected and the material produced or in process or acquired in connection with the performance of the project provided herein together with a summary report in five copies on its progress and accomplishments to date.

PAYMENT

- a. The Contractor may be reimbursed for direct and indirect costs incurred in the performance hereof as are allowable under the provisions of Subpart 31.2, 31.3, 31.6, or 31.7 (as applicable) of the Federal Acquisition Regulation in the not-to-exceed amount of \$ _____ (to be negotiated) subject to the Limitation of Funds Clause.
- b. Pursuant to the clause entitled "Fixed Fee," the Government will pay the Contractor on a monthly basis, the fixed fee amount stated in Section B of the contract, for the continued successful completion of the requirements of the contract. After payment of 85 percent of the fixed fee, further payment of the fixed fee shall be withheld until a reserve of either 15 percent of the total fixed fee or \$5,000, whichever is less, is set-aside. The subject

withholding will be released to the Contractor after determination is made by the Contracting Officer that all contract requirements have been achieved. Withholding of this amount requires no specific instruction from the Contracting Officer. Successful continued completion of the contract requirements shall be determined by the Contracting Officer.

- c. Each monthly interim payment request shall be supported by a statement of costs incurred by the Contractor in the performance of this contract and claimed to constitute allowable costs. In accordance with the clause 52.232-25, "Prompt Payment," these payments shall be made by the 30th day after receipt of proper request by the designated billing office. Any payments hereunder will be made upon determination by the Contracting Officer that the requirements of the contract are being met.
- d. Final invoice payment shall be made upon the Contracting Officer's determination that all requirements of the contract have been completed. The payment due date for final invoice shall be established in compliance with the clause 52.232-25.
- e. Each monthly interim payment request and the final invoice shall be submitted in accordance with the format contained in the attached "The FHWA Billing Instructions for Cost-Reimbursement Contracts" to be considered proper for payment. Prior approval of the Contracting Officer is required if the Contractor wishes to use a different format.

INDIRECT COSTS

Pending the establishment of final indirect cost rates which shall be negotiated based on audit of actual costs as provided in Subpart 42.7 of the Federal Acquisition Regulation, the Contractor shall be reimbursed for allowable indirect costs hereunder at the billing rate of [__TO BE NEGOTIATED__]. This INDIRECT COST provision does not operate to waive the LIMITATION OF FUNDS Clause. The Contractor's audited final indirect costs are allowable only insofar as they do not cause the contractor to exceed the total estimated costs for performance of the contract listed on page 2 (SECTION B) and under the PAYMENT provision above.

TRAVEL AND PER DIEM

Travel and Per Diem authorized under this contract shall be reimbursed in accordance with the Government Travel Regulations currently in effect. For this contract, Travel and Per Diem shall not exceed \$55,000.

Travel requirements under this contract shall be met using the most economical form of transportation available. If economy class transportation is not available, the request for payment

voucher must be submitted with justification for use of higher class travel indicating dates, times, and flight numbers. All travel shall be scheduled sufficiently in advance to take advantage of offered discount rates, unless authorized by the Contracting Officer.

CONTRACTING OFFICER'S TECHNICAL REPRESENTATIVE (COTR)

The Contracting Officer has designated _____ as the Contracting Officer's Technical Representative (COTR) to assist in monitoring the work under this contract. The COTR is responsible for the technical administration of the contract and technical liaison with the Contractor. The COTR IS NOT authorized to change the scope of work or specifications as stated in the contract, to make any commitments or otherwise obligate the Government or authorize any changes which affect the contract price, delivery schedule, period of performance or other terms or conditions.

The Contracting Officer is the only individual who can legally commit or obligate the Government for the expenditure of public funds. The technical administration of this contract shall not be construed to authorize the revision of the terms and conditions of this contract. Any such revision shall be authorized in writing by the Contracting Officer.

SUBCONTRACTS - ADVANCE NOTIFICATION AND CONSENT

Under this contract, the requirements of FAR 44.2, CONSENT TO SUBCONTRACTS, have been fulfilled for the following subcontracts:

[as negotiated]

Any future change or revision to the Statement of Work or other applicable aspects of this contract shall include the subcontract(s) only to the extent that performance of the subcontract(s) is directly affected by the change or revision.

KEY PERSONNEL

The Contractor has designated the following individuals as the key personnel under this contract. In the event that any key personnel become unavailable to continue in the performance of this contract, the appointment of a replacement shall be subject to prior approval of the Contracting Officer:

<u>Individual</u>	<u>Position</u>
_____	_____
_____	_____
_____	_____

SECTION H - SPECIAL CONTRACT REQUIREMENTS**CONTROL AND DISPOSAL OF HAZARDOUS CHEMICALS**

The Contractor shall comply with the Occupational Safety and Health Administration (OSHA) regulations 29 CFR Parts 1910 and 1926. Attention is directed to the control of hazardous material, Section 1910.1200 of the OSHA regulations and the Environmental Protection Agency regulations concerning the disposal of hazardous waste [Solid Waste Disposal Act, as amended by the Resources Conservation Act of 1976, as amended (42 U.S.C. 6901 et seq.)].

P A R T I I**SECTION I - CONTRACT CLAUSES****FH.1 PRINTING RESTRICTIONS**

All printing funded by this agreement must be done in conformance with Joint Committee on Printing regulations as prescribed in Title 44, United States Code, and Section 308 of Public Law 101-163, and all applicable Government Printing Office and Department of Transportation regulations.

**52.203-9 REQUIREMENT FOR CERTIFICATE OF PROCUREMENT
INTEGRITY-MODIFICATION (SEP 1995)**

- (a) Definitions. The definitions set forth in FAR 3.104-4 are hereby incorporated in this clause.
- (b) The Contractor agrees that it will execute the certification set forth in paragraph (c) of this clause when requested by the Contracting Officer in connection with the execution of any modification of this contract.
- (c) Certification. As required in paragraph (b) of this clause, the officer or employee responsible for the modification proposal shall execute the following certification. The certification in paragraph (c)(2) of this clause is not required for a modification which procures commercial items.

CERTIFICATE OF PROCUREMENT INTEGRITY-MODIFICATION (NOV 1990)

- (1) I, _____ (Name of certifier) am the officer or employee responsible for the preparation of this modification proposal and hereby certify that, to the best of my knowledge and belief, with the exception of any information described in this certification, I have no information concerning a violation or possible violation of subsection 27(a), (b), (d), or (f) of the Office of Federal Procurement Policy Act, as amended* (41 U.S.C. 423), (hereinafter referred to as "the Act"), as implemented in the FAR, occurring during the conduct of this procurement _____ (contract and modification number).
- (2) As required by subsection 27(e)(1)(B) of the Act, I further certify that to the best of my knowledge and belief, each officer, employee, agent, representative, and consultant of _____ (Name of Offeror) who has participated personally and substantially in the preparation or submission of this proposal has certified that he or she is familiar with, and will comply with, the requirements of subsection 27(a) of the Act, as implemented in the FAR, and will report immediately to me any information concerning a violation or possible violation of subsections 27(a), (b), (d), or (f) of the Act, as implemented in the FAR, pertaining to this procurement.
- (3) Violations or possible violations: (Continue on plain bond paper if necessary and label Certificate of Procurement Integrity-Modification (Continuation Sheet), ENTER NONE IF NONE EXISTS)

(Signature of the officer or employee responsible for the modification proposal and date)

(Typed name of the officer or employee responsible for the modification proposal)

* Subsections 27 (a), (b), and (d) are effective on December 1, 1990. Subsection 27(f) is effective on June 1, 1991.

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER TITLE 18, UNITED STATES CODE, SECTION 1001.

(End of certification)

- (d) In making the certification in paragraph (2) of the certificate, the officer or employee of the competing Contractor responsible for the offer or bid, may rely upon a one-time certification from each individual required to submit a certification to the competing Contractor, supplemented by periodic training. These certifications shall be obtained at the earliest possible date after an individual required to certify begins employment or association with the Contractor. If a contractor decides to rely on a certification executed prior to the suspension of section 27 (i.e., prior to December 1, 1989), the Contractor shall ensure that an individual who has so certified is notified that section 27 has been reinstated. These certifications shall be maintained by the Contractor for a period of 6 years from the date a certifying employee's employment with the company ends or, for an agency, representative, or consultant, 6 years from the date such individual ceases to act on behalf of the contractor.
- (e) The certification required by paragraph (c) of this clause is a material representation of fact upon which reliance will be placed in executing this modification.

52.222-2 PAYMENT FOR OVERTIME PREMIUMS (JUL 1990)

- (a) The use of overtime is authorized under this contract if the overtime premium cost does not exceed [*] or the overtime premium is paid for work -
 - (1) Necessary to cope with emergencies such as those resulting from accidents, natural disasters, breakdowns of production equipment, or occasional production bottlenecks of a sporadic nature;
 - (2) By indirect-labor employees such as those performing duties in connection with administration, protection, transportation, maintenance, standby plant protection, operation of utilities, or accounting;

- (3) To perform tests, industrial processes, laboratory procedures, loading or unloading of transportation conveyances, and operations in flight or afloat that are continuous in nature and cannot reasonably be interrupted or completed otherwise; or
 - (4) That will result in lower overall costs to the Government.
- (b) Any request for estimated overtime premiums that exceeds the amount specified above shall include all estimated overtime for contract completion and shall -
- (1) Identify the work unit; e.g., department or section in which the requested overtime will be used, together with present workload, staffing, and other data of the affected unit sufficient to permit the Contracting Officer to evaluate the necessity for the overtime;
 - (2) Demonstrate the effect that denial of the request will have on the contract delivery or performance schedule;
 - (3) Identify the extent to which approval of overtime would affect the performance or payments in connection with other Government contracts, together with identification of each affected contract; and
 - (4) Provide reasons why the required work cannot be performed by using multishift operations or by employing additional personnel.

[*Insert either "zero" or the dollar amount agreed to during negotiations. The inserted figure does not apply to the exceptions in subparagraph (a)(1) through (a)(4) of the clause.]

52.252-2 CLAUSES INCORPORATED BY REFERENCE (JUN 1988)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available.

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) CLAUSES

- 1. 52.202-1 Definitions (OCT 1995)
- 2. 52.203-3 Gratuities (APR 1984)
- 3. 52.203-5 Covenant Against Contingent Fees (APR 1984)

4. 52.203-7 Anti-Kickback Procedures (JUL 1995)
5. 52.203-10 Price or Fee Adjustment for Illegal or Improper Activity (SEP 1990)
6. 52.203-12 Limitation on Payments to Influence Certain Federal Transactions (JAN 1990)
7. 52.204-4 Printing/Copying Double-Sided on Recycled Paper (JUN 1996)
8. 52.209-6 Protecting the Government's Interest When Subcontracting With Contractors Debarred, Suspended, or Proposed for Debarment (JUL 1995)
9. 52.215-2 Audit and Records - Negotiation (AUG 1996)
10. 52.215-22 Price Reduction for Defective Cost or Pricing Data (OCT 1995)
11. 52.215-23 Price Reduction for Defective Cost or Pricing Data - Modifications (OCT 1995)
12. 52.215-24 Subcontractor Cost or Pricing Data (OCT 1995)
13. 52.215-25 Subcontractor Cost or Pricing Data - Modifications (OCT 1995)
14. 52.215-27 Termination of Defined Benefit Pension Plans (MAR 1996)
15. 52.215-31 Waiver of Facilities Capital Cost of Money (SEP 1987)
16. 52.215-33 Order of Precedence (JAN 1986)
17. 52.215-40 Notification of Ownership Change (FEB 1995)
18. 52.216-7 Allowable Cost and Payment (AUG 1996)
19. 52.216-8 Fixed Fee (APR 1984)
20. 52.216-11 Cost Contract - No Fee (APR 1984)
21. 52.216-12 Cost-Sharing Contract - No Fee (APR 1984)
22. 52.216-15 Predetermined Indirect Cost Rates (AUG 1996)

23. 52.219-8 Utilization of Small, Small Disadvantaged, and Women-Owned Small Business Concerns (OCT 1995)
24. 52.219-9 Small Business, Small Disadvantaged and Women-Owned Small Business Subcontracting Plan (AUG 1996)
25. 52.222-3 Convict Labor (AUG 1996)
26. 52.222-26 Equal Opportunity (APR 1984)
27. 52.222-35 Affirmative Action for Special Disabled and Vietnam Era Veterans (APR 1984)
28. 52.222-36 Affirmative Action for Handicapped Workers (APR 1984)
29. 52.222-37 Employment Reports on Special Disabled Veterans and Veterans of the Vietnam Era (JAN 1988)
30. 52.223-2 Clean Air and Water (APR 1984)
31. 52.223-3 Hazardous Material Identification and Material Safety Data (DEC 1989)
NOTE: Substitute the MSDS Alternate Form A for the OSHA Form 20
in
in the Federal Standard No. 313B, dated April 14, 1983.
32. 52.223-6 Drug-Free Workplace (JUL 1990)
33. 52.225-11 Restrictions on Certain Foreign Purchases (OCT 1996)
34. 52.226-1 Utilization of Indian Organizations and Indian-Owned Economic Enterprises (SEP 1996)
35. 52.227-1 Authorization and Consent (JUL 1995)
36. 52.227-2 Notice and Assistance Regarding Patent and Copyright Infringement (AUG 1996)
37. 52.227-11 Patent Rights-Retention by the Contractor (Short Form) (JUN 1989)
38. 52.227-14 Rights in Data - General (JUN 1987)
39. 52.227-16 Additional Data Requirements (JUN 1987)

40. 52.228-7 Insurance - Liability to Third Persons (MAY 1996)
41. 52.230-2 Cost Accounting Standards (APR 1996)
42. 52.230-3 Disclosure and Consistency of Cost Accounting Practices (APR 1996)
43. 52.230-5 Cost Accounting Standards--Educational Institution (DEC 1994)
44. 52.232-9 Limitation on Withholding of Payments (APR 1984)
45. 52.232-17 Interest (JUN 1996)
46. 52.232-20 Limitation of Funds (APR 1984)
47. 52.232-23 Assignment of Claims (JAN 1986)
48. 52.232-25 Prompt Payment (MAR 1994)
49. 52.232-28 Reserved
50. 52.233-1 Disputes (OCT 1995)
51. 52.233-3 Protest After Award (AUG 1996) -- Alternate I (JUN 1985)
52. 52.242-1 Notice of Intent to Disallow Costs (APR 1984)
53. 52.242-2 Production Progress Reports (APR 1991)
54. 52.242-3 Penalties for Unallowable Costs (OCT 1995)
55. 52.242-4 Certification of Indirect Costs (OCT 1995)
56. 52.242-13 Bankruptcy (JUL 1995)
57. 52.243-2 Changes - Cost-Reimbursement (AUG 1987) -- Alternate V (APR 1984)
58. 52.244-2 Subcontracts (Cost-Reimbursement and Letter Contracts) (MAR 1996)
59. 52.244-5 Competition in Subcontracting (JAN 1996)

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- 59. 52.249-5 Termination for Convenience of the Government (Educational and Other Nonprofit Institutions (SEP 1996)
- 60. 52.249-6 Termination (Cost-Reimbursement) (MAY 1986)
- 61. 52.249-14 Excusable Delays (APR 1984)
- 62. 52.253-1 Computer Generated Forms (JAN 1991)

**II. DEPARTMENT OF TRANSPORTATION ACQUISITION REGULATION S
(48 CHAPTER 12) CLAUSES**

- 1. Dissemination of Information - Educational Institutions (OCT 1994)
- 2. 1252.242-71 Contractor Testimony (OCT 1994)
- 3. 1252.242-72 Dissemination of Contract Information (OCT 1994)

52.252-4 ALTERATIONS IN CONTRACT (APR 1984)

Portions of this contract are altered as follows: None

P A R T I I I

SECTION J - LIST OF ATTACHMENTS

1. Sample Formats for Progress Reports
 - a. Monthly Progress Report - 1 page
 - b. Progress by Task - 1 page
 - c. Fiscal Summary by Task - 1 page
2. Sample Format for Staffing Assignments/Task Breakdown - 1 page
3. Billing Instructions - Cost Reimbursement Contracts - 8 pages
4. Standard Form 1448, Contracting Pricing Proposal Cover Sheet - 1 page
5. DOT Form 4220-44, Contract Pricing Summary and Instructions - 2 pages
6. Experience/Past Performance Reference Matrix - 1 page
7. Standard Form LLL, Disclosure of Lobbying Activities and Instructions - 4 pages

P A R T I V**SECTION K - REPRESENTATIONS, CERTIFICATIONS, A N D
ACKNOWLEDGEMENTS****52.203-4 - RESERVED****1. 52.203-8 REQUIREMENT FOR CERTIFICATE OF PROCUREMENT
INTEGRITY (SEP 1995) -- ALTERNATE I (SEP 1990)**

- (a) Definitions. The definitions at FAR 3.104-4 are hereby incorporated in this provision.
- (b) Certifications. As required in paragraph (c) of this provision, the officer or employee responsible for this offer shall execute the following certification. The certification in paragraph (b)(2) of this provision is not required for a procurement of commercial items.

CERTIFICATE OF PROCUREMENT INTEGRITY

- (1) I, _____ (Name of certifier), am the officer or employee responsible for the preparation of this offer and hereby certify that, to the best of my knowledge and belief, with the exception of any information described in this certificate, I have no information concerning a violation or possible violation of subsection 27(a), (b), (d), or (f) of the Office of Federal Procurement Policy Act, as amended* (41 U.S.C. 423), (hereinafter referred to as "the Act"), as implemented in the FAR, occurring during the conduct of this procurement _____ (solicitation number).
- (2) As required by subsection 27(e)(1)(B) of the Act, I further certify that, to the best of my knowledge and belief, each officer, employee, agent, representative, and consultant of _____ (Name of Offeror) who has participated personally and substantially in the preparation or submission of this offer has certified that he or she is familiar with, and will comply with, the requirements of subsection 27(a) of the Act, as implemented in the FAR, and will report immediately to me any information concerning a violation or possible violation of subsections 27 (a), (b), (d), or (f) of the Act, as implemented in the FAR, pertaining to this procurement.
- (3) Violations or possible violations: (Continue on plain bond paper if necessary and label Certificate of Procurement Integrity (Continuation Sheet), ENTER NONE IF NONE EXIST)

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-
- (4) I agree that, if awarded a contract under this solicitation, the certifications required by subsection 27(e)(1)(B) of the Act shall be maintained in accordance with paragraph (f) of this provision.

(Signature of the officer or employee responsible for the offer and date)

(Typed name of the officer or employee responsible for the offer)

* Subsections 27 (a), (b), and (d) are effective on December 1, 1990. Subsection 27(f) is effective on June 1, 1991.

THIS CERTIFICATION CONCERNS A MATTER WITHIN THE JURISDICTION OF AN AGENCY OF THE UNITED STATES AND THE MAKING OF A FALSE, FICTITIOUS, OR FRAUDULENT CERTIFICATION MAY RENDER THE MAKER SUBJECT TO PROSECUTION UNDER TITLE 18, UNITED STATES CODE, SECTION 1001.

(End of certification)

- (c) For procurements, including contract modifications, in excess of \$100,000 made using procedures other than sealed bidding, the signed certifications shall be submitted by the successful Offeror to the Contracting Officer within the time period specified by the Contracting Officer when requesting the certificates except as provided in subparagraphs (c)(1) through (c)(5) of this clause. In no event shall the certificate be submitted subsequent to award of a contract or execution of a contract modification:
- (1) For letter contracts, other unpriced contracts, or unpriced contract modifications, whether or not the unpriced contract or modification contains a maximum or not to exceed price, the signed certifications shall be submitted prior to the award of the letter contract, unpriced contract, or unpriced contract modification, and prior to the definitization of the letter contract or the establishment of the price of the unpriced contract or unpriced contract modification. The second certification shall

apply only to the period between award of the letter contract and execution of the document definitizing the letter contract, or award of the unpriced contract or unpriced contract modification and execution of the document establishing the definitive price of such unpriced contract or unpriced contract modification.

- (2) For basic ordering agreements, prior to the execution of a priced order; prior to the execution of an unpriced order, whether or not the unpriced order contains a maximum or not to exceed price; and, prior to establishing the price of an unpriced order. The second certificate to be submitted for unpriced orders shall apply only to the period between award of the unpriced order and execution of the document establishing the definitive price for such order.
- (3) A certificate is not required for indefinite delivery contracts (see Subpart 16.5) unless the total estimated value of all orders eventually to be placed under the contract is expected to exceed \$100,000.
- (4) For contracts and contract modifications which include options, a certificate is required when the aggregate value of the contract or contract modification and all options (see 3.104-4(e)) exceeds \$100,000.
- (5) For purposes of contracts entered into under section 8(a) of the SBA, the business entity with whom the SBA contracts, and not the SBA, shall be required to comply with the certification requirements of subsection 27(e). The SBA shall obtain the signed certificate from the business entity and forward the certificate to the Contracting Officer prior to the award of a contract to the SBA.
- (6) Failure of an Offeror to submit the signed certificate within the time prescribed by the Contracting Officer shall cause the offer to be rejected.
- (d) Pursuant to FAR 3.104-9(d), the Offeror may be requested to execute additional certifications at the request of the Government. Failure of an Offeror to submit the additional certifications shall cause its offer to be rejected.
- (e) A certification containing a disclosure of a violation or possible violation will not necessarily result in the withholding of award under this solicitation. However, the Government, after evaluation of the disclosure, may cancel this procurement or take any other appropriate actions in the interests of the Government, such as disqualification of the Offeror.
- (f) In making the certification in paragraph (2) of the certificate, the officer or employee of the competing Contractor responsible for the offer may rely upon a one-time certification

from each individual required to submit a certification to the competing Contractor, supplemented by periodic training. These certifications shall be obtained at the earliest possible date after an individual required to certify begins employment or association with the Contractor. If a Contractor decides to rely on a certification executed prior to the suspension of section 27 (i.e., prior to December 1, 1989), the Contractor shall ensure that an individual who has so certified is notified that section 27 has been reinstated. These certifications shall be maintained by the Contractor for 6 years from the date a certifying employee's employment with the company ends or, for an agent, representative, or consultant, 6 years from the date such individual ceases to act on behalf of the Contractor.

- (g) Certifications under paragraphs (b) and (d) of this provision are material representations of fact upon which reliance will be placed in awarding a contract.
2. **52.203-11 CERTIFICATION AND DISCLOSURE REGARDING PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS (APR 1991)**
- (a) The definitions and prohibitions contained in the clause, at FAR 52.203-12, Limitation on Payments to Influence Certain Federal Transactions, included in this solicitation, are hereby incorporated by reference in paragraph (b) of this certification.
- (b) The offeror, by signing its offer, hereby certifies to the best of his or her knowledge and belief that on or after December 23, 1989--
- (1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement;
- (2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the offeror shall complete and submit, with its offer, OMB standard form LLL, Disclosure of Lobbying Activities, to the Contracting Officer; and
- (3) He or she will include the language of this certification in all subcontract awards at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.
- (c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

3. 52.204-3 TAXPAYER IDENTIFICATION (MAR 1994)**(a) Definitions.**

"Common parent," as used in this solicitation provision, means that corporate entity that owns or controls an affiliated group of corporations that files its Federal income tax returns on a consolidated basis, and of which the offeror is a member.

"Corporate status," as used in this solicitation provision, means a designation as to whether the offeror is a corporate entity, an unincorporated entity (e.g., sole proprietorship or partnership), or a corporation providing medical and health care services.

"Taxpayer Identification Number (TIN)," as used in this solicitation provision, means the number required by the IRS to be used by the offeror in reporting income tax and other returns.

- (b) All offerors are required to submit the information required in paragraphs (c) through (e) of this solicitation provision in order to comply with reporting requirements of 26 U.S.C. 6041, 6041A, and 6050M and implementing regulations issued by the Internal Revenue Service (IRS). If the resulting contract is subject to reporting requirements described in FAR 4.903, the failure or refusal by the offeror to furnish the information may result in a 31 percent reduction of payments otherwise due under the contract.

(c) Taxpayer Identification Number (TIN).

___ TIN: _____.

___ TIN has been applied for.

___ TIN is not required because:

___ Offeror is a nonresident alien, foreign corporation, or foreign partnership that does not have income effectively connected with the conduct of a trade or business in the U.S. and does not have an office or place of business or a fiscal paying agent in the U.S.;

___ Offeror is an agency or instrumentality of a foreign government;

___ Offeror is an agency or instrumentality of a Federal, state or local government;

___ Other. State basis. _____

(d) Corporate Status.

- ___ Corporation providing medical and health care services, or engaged in the billing and collecting of payments for such services;
- ___ Other corporate entity;
- ___ Not a corporate entity;
- ___ Sole proprietorship
- ___ Partnership
- ___ Hospital or extended care facility described in 26 CFR 501(c)(3) that is exempt from taxation under 26 CFR 501(a).

(e) Common Parent.

- ___ Offeror is not owned or controlled by a common parent as defined in paragraph (a) of this clause.
- ___ Name and TIN of common parent:
- Name _____
- TIN _____

4. **52.204-5 WOMEN-OWNED BUSINESS (OCT 1995)**

- (a) Representation. The offeror represents that it [] is, [] is not a women-owned business concern.
- (b) Definition. "Women-owned business concern," as used in this provision, means a concern which is at least 51 percent owned by one or more women; or in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and whose management and daily business operations are controlled by one or more women.

5. **52.209-5 CERTIFICATION REGARDING DEBARMENT, SUSPENSION , PROPOSED DEBARMENT, AND OTHER RESPONSIBILITY MATTERS (MAR 1996)**

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(a) The Offeror certifies:

(1) To the best of its knowledge and belief, that:

(i) The Offeror and/or any of its Principals:

- (A) Are () are not () presently debarred, suspended, proposed for debarment, or declared ineligible for the award of contracts by any Federal agency;
 - (B) Have () have not (), within a 3-year period preceding this offer, been convicted of or had a civil judgment rendered against them for: commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, state, or local) contract or subcontract; violation of Federal or state antitrust statutes relating to the submission of offers; or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, tax evasion, or receiving stolen property; and
 - (C) Are () are not () presently indicted for, or otherwise criminally or civilly charged by a governmental entity with, commission of any of the offenses enumerated in subdivision (a)(1)(I)(B) of this provision.
- (ii) The Offeror has () has not (), within a 3-year period preceding this offer, had one or more contracts terminated for default by any Federal agency.
- (2) "Principals," for the purposes of this certification, means officers; directors; owners; partners; and, persons having primary management or supervisory responsibilities within a business entity (e.g., general manager; plant manager; head of a subsidiary, division, or business segment, and similar positions).

This certification concerns a matter within the jurisdiction of an agency of the United States and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under section 1001, title 18, United States Code.

- (b) The Offeror shall provide immediate written notice to the Contracting Officer if, at any time prior to contract award, the Offeror learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
- (c) A certification that any of the items in paragraph (a) of this provision exists will not necessarily result in withholding of an award under this solicitation. However, the certification will be considered in connection with a determination of the Offeror's responsibility. Failure of the Offeror to furnish a certification or provide such additional information as requested by the Contracting Officer may render the Offeror nonresponsible.

- (d) Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by paragraph (a) of this provision. The knowledge and information of an Offeror is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
- (e) The certification in paragraph (a) of this provision is a material representation of fact upon which reliance was placed when making award. If it is later determined that the Offeror knowingly rendered an erroneous certification, in addition to other remedies available to the Government, the Contracting Officer may terminate the contract resulting from this solicitation for default.

6. **52.215-6 TYPE OF BUSINESS ORGANIZATION (JUL 1987)**

The offeror or quoter, by checking the applicable box, represents that -

- (a) It operates as ____ a corporation incorporated under the laws of the State of _____, ____ an individual, ____ a partnership, ____ a nonprofit organization, or ____ a joint venture; or
- (b) If the offeror or quoter is a foreign entity, it operates as ____ an individual, ____ a partnership, ____ a nonprofit organization, ____ a joint venture, or ____ a corporation, registered for business in _____ (country).

7. **52.215-11 AUTHORIZED NEGOTIATORS (APR 1984)**

The offeror or quoter represents that the following persons are authorized to negotiate on its behalf with the Government in connection with this request for proposals or quotations:

(list names, titles, and telephone numbers of the authorized negotiators).

8. **FH.3 OTHER COMMUNICATIONS**

To facilitate communications, please provide your Telefax (FAX) number, if available.

F A X N u m b e r :

9. **FH.4 FEDERAL PROCUREMENT DATA**

Each Contractor receiving an award over \$25,000 will be requested to provide the information as set forth below:

- (1) Contractor Establishment Code (CEC): _____

(This number is assigned by Dun and Bradstreet, Inc., and is different from the standard DUNS Number contained in your company's Data Universal Numbering System (DUNS). If the number is not known, it can be obtained from the local Dun and Bradstreet office.

- (2) Home Office County and Congressional District: _____

- (3) Congressional District of the Principal place of performance:

-
- (4) SIC (Standard Industrial Code):
-

10. 52.219-1 SMALL BUSINESS PROGRAM REPRESENTATIONS (OCT 1995)

- (a) (1) The standard industrial classification (SIC) code for this acquisition is 8731.
- (2) The small business size standard is 500 employees.
- (3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.
- (b) Representations.
- (1) The offeror represents and certifies as part of its offer that it () is, () is not a small business concern.
- (2) (Complete only if offeror represented itself as a small business concern in block (b)(1) of this section.) The offeror represents as part of its offer that it () is, () is not a small disadvantaged business concern.

- (3) (Complete only if offeror represented itself as a small business concern in block (b)(1) of this section.) The offeror represents as part of its offer that it () is, () is not a women-owned small business concern.
- (c) Definitions. Small business concern, as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding on Government contracts, and qualified as a small business under the criteria in 13 CFR Part 121 and the size standard in paragraph (a) of this provision.

Small disadvantaged business concern, as used in this provision, means a small business concern that (1) is at least 51 percent unconditionally owned by one or more individuals who are both socially and economically disadvantaged, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more socially and economically disadvantaged individuals, and (2) has its management and daily business controlled by one or more such individuals. This term also means a small business concern that is at least 51 percent unconditionally owned by an economically disadvantaged Indian tribe or Native Hawaiian Organization, or a publicly owned business having at least 51 percent of its stock unconditionally owned by one or more of these entities, which has its management and daily business controlled by members of an economically disadvantaged Indian tribe or Native Hawaiian Organization, and which meets the requirements of 13 CFR Part 124.

Women-owned small business concern, as used in this provision, means a small business concern--

- (1) Which is at least 51 percent owned by one or more women or, in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more women; and
 - (2) Whose management and daily business operations are controlled by one or more women.
- (d) Notice.
- (1) If this solicitation is for supplies and has been set aside, in whole or in part, for small business concerns, then the clause in this solicitation providing notice of the set-aside contains restrictions on the source of the end items to be furnished.
 - (2) Under 15 U.S.C. 645(d), any person who misrepresents a firm's status as a small or small disadvantaged business concern in order to obtain a contract to be awarded under the preference programs established pursuant to sections 8(a), 8(d), 9, or 15 of the Small Business Act or any other provision of Federal law that specifically references section 8(d) for a definition of program eligibility, shall--

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- (i) Be punished by imposition of fine, imprisonment, or both;
- (ii) Be subject to administrative remedies, including suspension and debarment; and
- (iii) Be ineligible for participation in programs conducted under the authority of the Act.

11. **52.219-2 EQUAL LOW BIDS (OCT 1995)**

- (a) This provision applies to small business concerns only.
 - (b) The bidder's status as a labor surplus area (LSA) concern may affect entitlement to award in case of tie bids. If the bidder wishes to be considered for this priority, the bidder must identify, in the following space, the LSA in which the costs to be incurred on account of manufacturing or production (by the bidder or the first-tier subcontractors) amount to more than 50 percent of the contract price.
-
-

- (c) Failure to identify the labor surplus area as specified in paragraph (b) of this provision will preclude the bidder from receiving priority consideration. If the bidder is awarded a contract as a result of receiving priority consideration under this provision and would not have otherwise received award, the bidder shall perform the contract or cause the contract to be performed in accordance with the obligations of an LSA concern.

12. **52.230-1 COST ACCOUNTING STANDARDS NOTICES AND CERTIFICATION. (APR 1996)**

NOTE: This notice does not apply to small businesses or foreign governments. This notice is in three parts, identified by Roman numerals I through III. If the offeror is an educational institution, Part II does not apply unless the contemplated contract will be subject to full or modified CAS coverage pursuant to 48 CFR 9903.201-2(c)(5) or 9903.201-2(c)(6), respectively.

I. Disclosure Statement - Cost Accounting Practices and Certification

- (a) Any contract in excess of \$500,000 resulting from this solicitation, except contracts in which the price negotiated is based on (1) established catalog or market prices of commercial items sold in substantial quantities to the general public, or (2) prices set by law or regulation, will be subject to the requirements of The Cost Accounting Standards

Board (48 CFR Chapter 99), except for those contracts which are exempt as specified in 48 CFR 9903.201-1.

- (b) Any offeror submitting a proposal which, if accepted, will result in a contract subject to the requirements of 48 CFR Chapter 99 must, as a condition of contracting, submit a Disclosure Statement as required by 48 CFR 9903.202. When required, the Disclosure Statement must be submitted as a part of the offeror's proposal under this solicitation unless the offeror has already submitted a Disclosure Statement disclosing the practices used in connection with the pricing of this proposal. If an applicable Disclosure Statement has already been submitted, the offeror may satisfy the requirement for submission by providing the information requested in paragraph (c) of Part I of this provision.

CAUTION: In the absence of specific regulations or agreement, a practice disclosed in a Disclosure Statement shall not, by virtue of such disclosure, be deemed to be a proper, approved, or agreed-to-practice for pricing proposals or accumulating and reporting contract performance cost data.

- (c) Check the appropriate box below:

_____ (1) Certificate of Concurrent Submission of Disclosure Statement.

The offeror hereby certifies that, as a part of the offer, copies of the Disclosure Statement have been submitted as follows: (I) original and one copy to the cognizant Administrative Contracting Officer (ACO), or cognizant Federal agency official authorized to act in that capacity (Federal official), as applicable, and (ii) one copy to the cognizant Federal auditor.

(Disclosure must be on Form No. CASB DS-1 or CASB-DS-2, as applicable. Forms may be obtained from the cognizant ACO or Federal official and/or from the loose-leaf version of the Federal Acquisition Regulation.)

D a t e o f D i s c l o s u r e S t a t e m e n t :

Name and Address of Cognizant ACO or Federal Official Where Filed:

The offeror further certifies that the practices used in estimating costs in pricing

this proposal are consistent with the cost accounting practices disclosed in the Disclosure Statement.

_____ (2) Certificate of Previously Submitted Disclosure Statement.

The offeror hereby certifies that the required Disclosure Statement was filed as follows:

D a t e o f D i s c l o s u r e S t a t e m e n t :

Name and Address of Cognizant ACO or Federal Official Where Filed:

The offeror further certifies that the practices used in estimating costs in pricing this proposal are consistent with the cost accounting practices disclosed in the applicable Disclosure Statement.

_____ (3) Certificate of Monetary Exemption.

The offeror hereby certifies that the offeror, together with all divisions, subsidiaries, and affiliates under common control, did not receive net awards of negotiated prime contracts and subcontracts subject to CAS totaling more than \$25 million (of which at least one award exceeded \$1 million) in the cost accounting period immediately preceding the period in which this proposal was submitted. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

_____ (4) Certificate of Interim Exemption.

The offeror hereby certifies that (I) the offeror first exceeded the monetary exemption for disclosure, as defined in (3) of this subsection, in the cost accounting period immediately preceding the period in which this offer was submitted and (ii) in accordance with 48 CFR 9903.202-1, the offeror is not yet required to submit a Disclosure Statement. The offeror further certifies that if an award resulting from this proposal has not been made within 90 days after the end of that period, the offeror will immediately submit a revised certificate to the

Contracting Officer, in the form specified under subparagraph (c)(1) or (c)(2) of Part I of this provision, as appropriate, to verify submission of a completed Disclosure Statement.

CAUTION: Offerors currently required to disclose because they were awarded a CAS-covered prime contract or subcontract of \$25 million or more in the current cost accounting period may not claim this exemption (4). Further, the exemption applies only in connection with proposals submitted before expiration of the 90-day period following the cost accounting period in which the monetary exemption was exceeded.

II Cost Accounting Standards - Eligibility for Modified Contract Coverage

If the offeror is eligible to use the modified provisions of 48 CFR 9903.201-2(b) and elects to do so, the offeror shall indicate by checking the box below. Checking the box below shall mean that the resultant contract is subject to the Disclosure and Consistency of Cost Accounting Practices clause in lieu of the Cost Accounting Standards clause.

☐ The offeror hereby claims an exemption from the Cost Accounting Standards clause under the provisions of 48 CFR 9903.201-2(b) and certifies that the offeror is eligible for use of the Disclosure and Consistency of Cost Accounting Practices clause because during the cost accounting period immediately preceding the period in which this proposal was submitted, the offeror received less than \$25 million in awards of CAS-covered prime contracts and subcontracts, or the offeror did not receive a single CAS-covered award exceeding \$1 million. The offeror further certifies that if such status changes before an award resulting from this proposal, the offeror will advise the Contracting Officer immediately.

CAUTION: An offeror may not claim the above eligibility for modified contract coverage if this proposal is expected to result in the award of a CAS-covered contract of \$25 million or more or if, during its current cost accounting period, the offeror has been awarded a single CAS-covered prime contract or subcontract of \$25 million or more.

III. Additional Cost Accounting Standards Applicable to Existing Contracts.

The offeror shall indicate below whether award of the contemplated contract would, in accordance with subparagraph (a)(3) of the Cost Accounting Standards clause, require a change in established cost accounting practices affecting existing contracts and subcontracts.

☐ Yes ☐ No.

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FH.2 NOTIFICATION OF DEFECTIVE INVOICES

Each Contractor receiving an award will be requested to identify a person or office to be contacted for prompt notification regarding the receipt by the Government of a defective invoice.

N a m e

T i t l e

A d d r e s s

City & State _____ Zip Code _____

Area Code _____ Telephone No. _____

Telex No. _____ TWX

TO BE COMPLETED BY OFFEROR

NAME: _____

DATE:

BY: _____
(Signature)_____
(Title)**SECTION L - INSTRUCTIONS, CONDITIONS, AND NOTICES TO OFFERORS**

(please show the RFP number and closing date on the forwarding envelope)

QUESTIONS: All questions concerning this RFP should be directed in writing to the contact point indicated in block 10 of solicitation cover page (Standard Form 33).

NOTE: Facsimile bids/proposals will not be considered for this solicitation.

52.215-12 RESTRICTION ON DISCLOSURE AND USE OF DATA (APR 1984)

Offerors or quoters who include in their proposals or quotations data that they do not want disclosed to the public for any purpose or used by the Government except for evaluation purposes, shall -

(a) Mark the title page with the following legend:

"This proposal or quotation includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed - in whole or in part - for any purpose other than to evaluate this proposal or quotation. If, however, a contract is awarded to this offeror or quoter as a result of - or in connection with - the submission of this data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in this data if it is obtained from another source without restriction. The data subject to this restriction are contained in sheets _____ (insert numbers or other identification of sheets)"; and

(b) Mark each sheet of data it wishes to restrict with the following legend:

"Use or disclosure of data contained on this sheet is subject to the restriction on the title page of this proposal or quotation."

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52.216-1 TYPE OF CONTRACT (APR 1984)

The Government contemplates awarding a cost-plus-fixed-fee contract from this solicitation.

This requirement is not a small business set-aside.

INSTRUCTIONS FOR PREPARATION AND SUBMISSION OF PROPOSALS

A. Introduction

This solicitation is written in the Uniform Contract Format described in Federal Acquisition Regulation (FAR) section 15.406. Offerors are encouraged to familiarize themselves with the Uniform Contract Format to facilitate their understanding of the terms and conditions contained herein, the instructions which follow, and the source selection process.

B. Submission Requirements

Proposals must be submitted in 6 complete sets (original and 5 copies). Proposals shall include 4 separate sections as described below:

Part I - Offer

This section of the proposal shall consist of the offerors completed model contract information from Sections A through K of the RFP. The offer must demonstrate that the offeror agrees to the terms and conditions of the model contract of this solicitation, including all documents, exhibits and other attachments that are incorporated therein by reference and made a part thereof.

Part I shall consist of the following:

1. RFP Section A - Standard Form 33, "Solicitation, Offer and Award," blocks 12 through 18;
2. RFP Section B - "Supplies or Services and /Prices/Costs," with the offeror's insertion of its proposed estimated costs and fixed fee in the appropriate blanks.
3. RFP Section K - "Representations, Certifications, and Other Statements of Offerors or Quoters."

The submission of the above items in accordance with these instructions will, if accepted by the Government, contractually bind the Government and the offeror to the terms and conditions of the model contract (RFP Sections A through K). Prospective offerors are advised to carefully review the terms and conditions of the model contract carefully and to refer any questions to the RFP's point of contact prior to the deadline for receipt of proposals.

The Government will not consider alternate proposals for this requirement.

NOTE: The Government intends to award this contract without discussions, in accordance with FAR 15.610(a) and 52.215-16(c) Alternate II. However, the Government reserves the right to hold discussions and request revised proposals.

Part II - Technical Proposal

The technical proposal shall be a clear, concise technical dissertation (not to exceed 100 pages) describing how you would proceed if awarded a contract. It should correspond to each task in the Statement of Work (Section C), describing how the offeror's qualifications, experience and approach relate to the tasks. The technical proposal shall include the offeror's proposed methodology, data collection techniques, equipment requirements and deployment and other investigative tools to be utilized. Offeror's attention is directed to the evaluation criteria in Section M herein, in preparing the technical proposal. The technical proposal shall include:

- A. Technical and management approach.
- B. Assumptions, deviations, and exceptions (as necessary).
- C. Identify technical uncertainties, and make specific proposals for the resolution of any uncertainties.
- D. An organized workplan setting forth a specific schedule of the work to be performed as outlined in Section C, STATEMENT OF WORK. The workplan shall be in such a form as to establish a firm schedule of dates for:
 - 1. The start and completion of all activities.
 - 2. Related requirements of manpower.
 - 3. Other resources assignable to each activity.

NOTE: The author(s) of the technical proposal shall be identified, including identification of the specific portion for which each was responsible. The technical proposal shall also include a written certification that the proposed PI has reviewed and is responsible for the accuracy, scope, and content of the proposal in its entirety.

NOTATIONS RELATIVE TO THE STATEMENT OF WORK:

Tasks B.1 and D.1 - The objectives of this contract, as they relate to bonded FRP systems, are to produce mandatory *product performance specifications*, guide *analysis, design, and construction specifications*, recommended *qualification/acceptance test methods*, recommended *test methods for short-term structural behavior*, recommended *test methods for long-term material and structural behavior*, and recommended *field evaluation methods*. These

specifications and guidelines are intended to provide a generally-accepted minimum benchmark for designers and manufacturers. Although the production of acceptable bonded FRP systems designed specifically for bridge applications is an essential step in the development and validation of these specifications, it is not the objective of the contract. This contract is not a validation or marketing exercise for existing proprietary products, either. The performance specifications developed under this contract are intended to provide manufacturers with the opportunity to make improvements on the products developed or tested here in order to meet the requirements of their potential customers. The specifications are also expected to provide structural engineers with the means to compare these products. Proposals will be evaluated strictly on the basis of reaching the objective of developing these specifications, guidelines, and methods.

Task B.2 - Offerors are directed to provide a discussion of the proposed test matrix for sub-task B.2 and all other testing tasks in their technical proposals and cost estimates, including required number of specimens of each type, required test equipment, and scheduling. Offerors should also discuss alternative sampling plans and the appropriate uses of destructive and non-destructive testing.

Task B.3 - The amount and quality of prior work by others may affect the decision whether or not to conduct original tests, validation tests, or neither, under this task, with a consequent effect on the contract budget. Offerors should be familiar with prior work in each of the four application areas and should provide a discussion of this work in their technical proposals. Offerors should include an assessment the type of testing needed in this task as a result. Offerors are expected to provide a discussion of the proposed test matrix for sub-task B.2 and all other testing tasks in their technical proposals and cost estimates, including required number of specimens of each type, required test equipment, and scheduling. Offerors are also expected to discuss alternative sampling plans and the appropriate uses of destructive and non-destructive testing.

Task D.3 - The amount and quality of prior work by others may affect the decision whether or not to conduct original tests, validation tests, or neither, under this task, with a consequent effect on the budget. Offerors are expected to be familiar with prior work in each of the four application areas. They are expected to discuss this work in their proposals. They are expected to use this discussion to offer an assessment of the type of testing needed in this task. This assessment will include consideration of all of the factors mentioned in Task D.3, including those which will be addressed in Task A.1.

Part III - Staffing Proposal

The staffing proposal shall clearly identify the proposed Principal Investigator (PI) and all other key staffing members. The PI shall devote a minimum of 30 percent of his normal working time to this study.

The Staffing Proposal shall include a specific description of the proposed PI's qualifications and a similar description of the qualifications of each of the proposed key staffing members. Each description shall include: (1) the person's past experience, areas of expertise, publications, present work responsibilities, and other appropriate information; and (2) an explanation of how that person's qualifications will be utilized in the conduct of the proposed research. Substantial involvement from each of the following disciplines and/or expertise is necessary for the successful completion of this project:

Structural Design Engineering with FRP experience; Highway Bridge Structural Design/Construction; Structural Testing; Non-Destructive Evaluation of Materials and Structures; FRP Materials Development and Testing; Adhesives Development and Testing; Accelerated Testing (FRP Material/structures, Adhesive Materials, Adhesive Joints); Analysis of FRP Structures, Adhesive Materials, Adhesive Joints, Corrosion Engineering and Testing.

Staffing proposals must include a table identifying all key personnel assigned to the effort and the percentage of time and person-hours each key person will expend on each task.

The Government estimates a range between 9,500 and 10,500 professional staffing hours to be necessary for the successful completion of this project. This does not include clerical hours. This estimate is advisory only. The estimate should be used as a general guide and not be considered as a maximum or minimum limit by the offerors in preparing their proposal. An offeror's staffing plan may vary significantly from this estimate, due to varying experience and qualification levels of the proposed personnel and the unique nature of the proposed research approach. The Government will consider these factors when assessing the adequacy of the proposed level of effort.

Part IV - Business And Cost/Price Proposal

This volume shall include all pricing information and certain general financial/organizational information, as described below:

A. Cost/Price Information

1. Adequate price competition is expected to exist, and this action is therefore exempted from the requirement for submission of cost or pricing data. However, offerors are asked to submit a budget summary in the format provided in Section J, Attachment 6. This information is necessary to determine the cost realism and adequacy of the offeror's proposal., e.g., information adequate to validate that the proposed costs are consistent with the technical proposal, or cost breakdowns to help identify unrealistically priced proposals.
2. Any information submitted must support the price proposed. Include sufficient detail or cross references to clearly establish the relationship of the information

provided to the price proposed. Support any information provided by explanations or supporting rationale as needed to permit the Government to evaluate the documentation. Such information is not considered cost or pricing data, and will not require certification in accordance with FAR 15.804-4.

3. If, after receipt of offers, the Contracting Officer concludes there is insufficient information available to determine price reasonableness and none of the exceptions described in FAR 15.804-1 applies, then cost or pricing data shall be obtained.

NOTE: Travel will be reimbursed and for the purposes of this solicitation, assume travel and per diem costs of \$55,000 .

4. Facilities and Special Equipment, Including Tooling.

It is the general policy of the FHWA not to provide general or special purpose equipment, facilities, or tooling of a capital nature except in unusual circumstances. Items having a unit cost of less than \$1,000 will not be provided to you except as authorized with nonprofit institutions or State and local governments. If special purpose equipment of a capital nature is being proposed, provide a description of the items, details of the proposed cost including competitive prices, and a justification as to why the Government should furnish the equipment or allow its purchase with contract funds.

5. Your proposal must include a statement regarding availability of facilities and equipment necessary to accomplish the required work. If any or all of the required facilities are Government-owned, a complete listing of these facilities is required and the name of the cognizant Government agency furnishing the facilities and the facilities contract number(s).

6. Subcontracts/Consultants.

If subcontractors and/or individual consultants will be used in carrying out the requirements of this project, the following minimum information concerning the subcontractor shall be furnished:

- a. Name and address of the subcontractor or consultant.
- b. Statement of work and work plan (schedule) for the portion of work to be conducted by the subcontractor or consultant.
- c. Names and positions of personnel who will work on the project.
- d. A letter or other statement from each proposed consultant and/or subcontractor indicating that he has been approached on the matter of participation in this study and that he is willing and able to do so in the terms indicated.

NOTE: It is the Government's desire for the Contractor to closely cooperate with a representative group of bonded FRP system manufacturers and adhesive manufacturers during the early phases of this project. Offerors should include an appropriate estimate in their cost

proposals for subcontract and consultant costs associated with this involvement..

B. Other Financial/Organizational Information

1. General Information. You must attach a supplemental sheet providing the following information:
 - a. Indicate your fiscal year period (provide month to month dates).
 - b. Indicate whether the proposed indirect cost rate(s) have been audited and accepted by any Federal audit agency. Give name, location and telephone number of the agency, and the date of acceptance.
 - c. Indicate whether your system of control of Government property has been approved by a Government agency. If so, provide the name, location and telephone number of the Government agency, and date of approval.
 - d. Indicate whether written purchasing procedures exist, and whether your purchasing system has been approved by a Government agency. If so, provide the name, location and telephone number of the cognizant agency, and date of approval.
 - e. Indicate whether your cost estimating system has been approved by any Government agency. If so, provide the name, location and telephone number of the cognizant agency, and date of approval.
 - f. Indicate whether your cost accumulation system has been approved by any Government agency. If so, provide the name, location and telephone number of the cognizant agency, and date of approval

2. Subcontracting Plan.

As prescribed by FAR 52.219-9, if the total contract price is expected to exceed \$500,000, the offeror shall include a statement in its offer relative to subcontracting opportunities under the proposed contract. The offeror shall state that there will be subcontracting, or that the offeror has determined that all work will be done in-house. If there will be subcontracting opportunities, the offeror shall submit a subcontracting plan as prescribed in FAR 52.219-9.

If it is determined there will not be subcontracting opportunities, the offeror shall submit with its capability information, a statement of circumstances supporting this determination. All subcontracting plans and statements supporting the absence of subcontracting opportunities must

be acceptable to the Contracting Officer. Failure to submit and negotiate an acceptable subcontracting plan or a statement supporting the absence of subcontracting opportunities shall render the offeror ineligible for award of a contract.

NOTE: Offeror's should refer to Section M herein, regarding the Government's desire for subcontracting involvement from women owned and minority business enterprises as well as historically black colleges.

3. Past Performance References.

The offeror is required to submit information on all contracts (up to a maximum of 10 of the most recently completed contracts or on-going contracts that are at least 12 months into the period of performance) involving similar or related services over the past three years with FHWA and/or other organizations (commercial, State and local, or Federal). The following information must be provided:

- Customer name and address;
- Technical office point of contact (name and telephone number);
- Contracting/business office point of contact (name and telephone number);
- Brief description of project or services;
- Contract number (if applicable);
- date of contract award and period of performance;
- Type of contract;
- Total contract dollar value at award;
- Current contract value if different from contract award amount.

The offeror may identify any relevant quality awards or certifications that they have received over the past three years. In those instances where a new corporate entity lacks relevant past performance history, they may submit data on the individual components that comprise the new entity or on individual key personnel, with past performance history. The Government may use this information to contact technical/business representatives on previous contracts to obtain information regarding performance. In evaluating an offeror's past performance, the Government reserves the right to use any other know sources of information in addition to that provided by the offeror.

The REPRESENTATIONS, CERTIFICATIONS, AND ACKNOWLEDGEMENTS, Section K, must be completed and submitted as a part of your proposal.

The following documents are incorporated by reference and may be reviewed in, or obtained upon request from the Office of Acquisition Management:

"Guidelines for Preparing Federal Highway Administration Publications"

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(FHWA-AD-88-001), dated January 1988 and Change 1, dated May 20, 1995.

Federal Information Processing Standards Publication 38 (FIPS PUB) dated February 15, 1976, and FIPS PUB 64 dated August 1, 1979, are incorporated by reference and is available for purchase from:

National Technical Information Service
5235 Port Royal Road
Springfield, Virginia 22164
Telephone Number (703) 487-4650

Until a formal notice of award is issued, no communication by the Government either written or oral shall be interpreted as a promise that an award will be made.

The Contracting Officer is the only individual who can legally commit or obligate the Government to the expenditure of public funds. No cost chargeable to the proposed contract can be incurred before receipt of a fully executed contract or specific written authorization from the Contracting Officer.

52.233-2 SERVICE OF PROTEST (AUG 1996)

- (a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO) shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgement of receipt from Mr. Frank J. Waltos, HAM-20, Room 4404, 400 Seventh Street, SW., Washington, D.C. 20590.
- (b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

I. FEDERAL ACQUISITION REGULATION (48 CFR CHAPTER 1) SOLICITATION PROVISIONS

52.252-1 SOLICITATION PROVISIONS INCORPORATED BY REFERENCE (JUN 1988)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available

- 52.209-7 Organizational Conflicts of Interest Certificate--Marketing Consultants (OCT 1995)
- 52.215-5 Solicitation Definitions (JUL 1987)
- 52.215-7 Unnecessarily Elaborate Proposals or Quotations (APR 1984)
- 52.215-8 Amendments to Solicitations (DEC 1989)

52.215-9	Submission of Offers (JUL 1995)
52.215-10	Late Submissions, Modifications, and Withdrawals of Proposals (AUG 1996)
52.215-13	Preparation of Offers (APR 1984)
52.215-14	Explanation to Prospective Offerors (APR 1984)
52.215-15	Failure to Submit Offer (JUL 1995)
52.215-16	Contract Award (OCT 1995)
52.215-30	Facilities Capital Cost of Money (SEP 1987)
52.227-6	Royalty Information (APR 1984)
52.228-6	Reserved

II. DEPARTMENT OF TRANSPORTATION ACQUISITION REGULATION (48 CFR CHAPTER 12) SOLICITATION PROVISIONS

52.252-3 ALTERATIONS IN SOLICITATION (APR 1984)

Portions of this solicitation are altered as follows:

None.

52.252-5 AUTHORIZED DEVIATIONS IN PROVISIONS (APR 1984)

- (a) The use in this solicitation of any Federal Acquisition Regulation (48 CFR Chapter 1) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the provision.
- (b) The use in this solicitation of any Department of Transportation Acquisition Regulation (48 CFR Chapter 12) provision with an authorized deviation is indicated by the addition of "(DEVIATION)" after the date of the regulation.

SECTION M - EVALUATION FACTORS FOR AWARD

EVALUATION CRITERIA

A. Technical

Technical proposals will be evaluated on the following criteria listed in order of descending importance:

1. Offeror's Demonstration of Technical Competence to Conduct Proposed Research.
 - a. Qualifications of the Principal Investigator and other members of the research team as demonstrated in the technical dissertation, technical proposal and staffing proposal. This includes time allocation devoted to the proposed project by each member.
 - b. Offeror's demonstrated thorough understanding of the subject matter, the recognition of potential problems, and the appropriateness of methods proposed to overcome them.
2. Offeror's Responsiveness to the Technical Requirement of the RFP.
 - a. Demonstrated insight by development of a detailed work plan as requested in the RFP document for all the tasks.
 - b. Incorporation of innovative ideas, technology from other fields and new approaches in the proposed work plan to meet study objective.
 - c. Logic and completeness of the proposed work plan.
3. Offeror's Indication of Sufficient Resources to Complete the Contract Requirements Satisfactorily and on Schedule.
 - a. Demonstrated successful experience of the research team in performing similar or related studies. Adequacy of resources to conduct experimental work.
 - b. Demonstrated ability to manage the proposed research team in complex, product-oriented assignments. Adequacy of the organizational plans for accommodating closely related research by other organizations, possibly involving joint use of facilities.
 - c. Significant prior experience in design and construction management among members of the proposed research team in concrete bridge rehabilitation.

B. Cost

In addition to the criteria listed above, relative cost will be considered in the ultimate award decision. Cost/price proposals will be analyzed to assess realism and probable cost to the Government. The proposed costs may be adjusted, for the purpose of evaluation, based upon the results of the cost realism assessment.

C. Past Performance

Past performance will be reviewed to as a separate factor to assure that the offeror has relevant and successful experience in the areas of work required by the contract. Past performance will be evaluated on the following criteria:

1. Quality of the product/service;
2. Timeliness of performance;
3. Cost control;
4. Customer responsiveness.

All past performance factors are of equal importance. Past performance will not be scored, offerors will receive an overall rating of: Excellent, Good, Average, Poor, or Unacceptable.

The Government may obtain past performance information from any of the references provided in the offerors proposal, from other customers known to the Government, and from any other sources having useful or relevant information. Firms having no relevant past performance history will receive a neutral evaluation for past performance.

Award may be made from initial offers without discussions. If discussions are held, offerors selected for discussions will be provided the opportunity to address unfavorable past performance reports.

D. Basis for Award

The Government will accept the offer that is considered the most advantageous to the Government. Of the three factors, (A) technical, (B) cost, and (C) past performance, technical and cost are considered the most important with technical considered of greater importance than cost. Past performance is of less importance than technical or cost.